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(54) **ELECTROSURGICAL INSTRUMENT WITH DUAL RADIOFREQUENCY AND MICROWAVE ELECTROMAGNETIC ENERGY**

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(57) **ABSTRACT**

An electrosurgical instrument for delivering radiofrequency (RF) electromagnetic (EM) energy and microwave frequency EM energy from a coaxial feed cable through an instrument tip into tissue. The instrument tip comprises a dielectric body separating first and second conductive elements, which act as active and return electrodes to convey the RF EM radiation by conduction, and as an antenna to radiate the microwave EM radiation. The instrument also has a fluid feed incorporated into its tip, e.g. in an additional dielectric element mounted on the underside of the tip, for delivering fluid. The delivered fluid may be a gas plasma to assist treatment or a liquid to plump up a tissue region before treatment. The instrument may fit in an endoscope.

15 Claims, 14 Drawing Sheets